AMENDMENTS TO THE CLAIMS

Please amend claims 1-8, 12, 16-17, 20-21, and 23, please cancel claims 10 and 17-23, and please add new claims 28-38, such that the status of the claims is as follows:

1. (Currently Amended) A method for fabricating tapered elements from a substrate having a size many times that of a single element, the method comprising:

~~providing a substrate having first and second major surfaces;~~

~~defining a first and second cutting directions that form an angle in relation to each other;~~

cutting the substrate a plurality of times along ~~the~~ a first cutting direction to result in a first set of cuts, each cut being spaced from an adjacent cut by a first ~~predetermined indexing~~ distance; ~~and~~

cutting the substrate a plurality of times along ~~the~~ a second cutting direction resulting in second set of cuts, each cut being spaced from an adjacent ~~cutting~~ cut by a second ~~predetermined indexing~~ distance;

wherein the first cutting direction and the second cutting direction intersect to form a feature angle less than about 90 degrees.

2. (Currently Amended) The method of claim 1, wherein the first distance and the second ~~predetermined indexing distances~~ distance are ~~substantially uniform such that the cuts in both cutting directions are equidistant~~ about equal.

3. (Currently Amended) The method of claim 1, further comprising:

~~defining a third cutting direction which transverses both the first and second cutting directions~~;

cutting the substrate a plurality of times along ~~the~~ a third cutting direction to result in a third set of cuts~~, each cut being spaced from an adjacent cut by a third predetermined indexing distance~~.

4. (Currently Amended) The method of claim 3, wherein ~~the third predetermined indexing distance~~ each cut of the third set of cuts is separated from an adjacent cut by a third distance ~~is substantially uniform~~.

5. (Currently Amended) The method of claim3, ~~wherein the substrate has a dicing surface, and the steps of defining the first, second and third cutting directions~~ further ~~comprise~~ comprising:

providing at least three ~~optically~~ detectable marks on ~~the dicing surface~~ the substrate;

selecting a first pair of marks to define the first cutting direction;

selecting a second pair of marks to define the second cutting direction, wherein at least one mark in the second pair of marks is not included in the first pair of marks; and

selecting a third pair of marks to define the third cutting direction, wherein the third pair of marks is different from both the first pair of marks and the second pair ~~pairs~~ of marks by at least one mark.

6. (Currently Amended) The method of claim 5, wherein the ~~dicing surface of the~~ substrate has peripheral edges, and the ~~first, the second, the third and the fourth~~ at least three detectable marks are placed close to the peripheral edges such that the marks are separated from each other as far as possible while still accommodating proper cutting directions.

7. (Currently Amended) The method of claim 5, wherein the detectable marks include a first mark, a second mark, a third mark, and a fourth mark, the first pair of marks ~~include~~ includes the first mark and the second ~~marks~~ mark, the second pair of marks ~~include~~ includes the third mark and the fourth ~~marks~~ mark, and the third pair of marks ~~include~~ includes either the first mark and the third mark or the second mark and the fourth ~~fiducial marks~~ mark.

8. (Currently Amended) The method of claim 6, wherein the first mark, the second mark, the third mark, and the fourth ~~fiducial marks~~ mark are cross-hair type marks capable of optically indicating a precise reference point.

9. (Original) The method of claim 1, wherein the substrate comprises a piezoelectric material.

10. (Canceled)

11. (Original) The method of claim 1, further comprising:

forming isolation trenches on the substrate, the resultant isolation trenches being parallel to each other and aligned in a trench direction forming a first angle with the first cutting direction and a second angle with the second cutting direction, each trench being spaced from an adjacent trench by a trench distance.

12. (Currently Amended) The method of claim 11, further comprising:

forming the substrate of ~~wherein the substrate comprises~~ a piezoelectric material~~,~~ ; and

cutting the substrate ~~is cut~~ into an plurality of elements~~,~~ so that each element ~~being adapted to be~~ is formed as an in-plane piezoelectric bimorph~~,~~ and the

isolation trenches ~~are adapted to~~ divide each one of the in-plane piezoelectric bimorphs into two in-plane piezoelectric portions.

13. (Original) The method of claim 11, wherein the isolation trenches are formed using a method selected from a group consisted of photolithography, ion milling, reactive ion etching, and laser ablation.

14. (Original) The method of claim 11, wherein the first angle and the second angle are equal to each other.

15. (Original) The method of claim 11, wherein the trench distances between two adjacent parallel trenches are substantially uniform.

16. (Currently Amended) The method of claim 1, ~~wherein the substrate has a dicing surface, and the steps of defining a first and second cutting directions~~ further ~~comprises~~ comprising:

providing at least three detectable marks on the ~~dicing surface~~ substrate;

selecting a first pair of marks to define the first cutting direction; and

selecting a second pair of marks to define the second cutting direction, wherein the second pair of marks include at least one mark which is not included in the first pair of marks.

17.-23. (Canceled)

24.-27. (Withdrawn)

28. (New) A method for fabricating tapered elements from a substrate, the method comprising:

cutting the substrate a plurality of times along a first cutting direction to result in a first set of cuts, each cut being spaced from an adjacent cut by a first distance;

cutting the substrate a plurality of times along a second cutting direction resulting in second set of cuts, each cut being spaced from an adjacent cut by a second distance; and

cutting the substrate a plurality of times along the third cutting direction to result in a third set of cuts, each cut being spaced from an adjacent cut by a third distance.

29. (New) The method of claim 28, further comprising:

providing at least three detectable marks on the substrate;

selecting a first pair of marks to define the first cutting direction;

selecting a second pair of marks to define the second cutting direction, wherein at least one mark in the second pair of marks is not included in the first pair of marks; and

selecting a third pair of marks to define the third cutting direction, wherein the third pair of marks is different from both the first and second pairs of marks by at least one mark.

30. (New) The method of claim 29, wherein the substrate has peripheral edges, and the at least three detectable marks are placed close to the peripheral edges such that the marks are separated from each other as far as possible while still accommodating proper cutting directions.

31. (New) The method of claim 29, wherein the detectable marks include a first mark, a second mark, a third mark, and a fourth mark, the first pair of marks includes the first mark and the second mark, the second pair of marks includes the third mark and the fourth mark, and the third pair of marks includes either the first mark and the third mark or the second mark and the fourth mark.

32. (New) The method of claim 31, wherein the first mark, the second mark, the third mark, and the fourth mark are cross-hair type marks capable of optically indicating a precise reference point.

33. (New) A dicing method for making a plurality of 4-sided trapezoid elements from a substrate, each element having a first feature angle defined by a first angled side of the element and a second angled side of the element, and a second feature angle defined by a bottom side of the element and the first angled side or the second angled side of the element, the method comprising:

marking the surface of the substrate using a plurality of detectable marks, wherein the marks define an n-sided ($n \geq 3$) guiding polygon, the guiding polygon having a first angled side and a second angled side, wherein the first angled side and the second angled side define an angle equal to the first feature angle of the elements, and a third side, wherein the third side and one of the first angled side or the second angled side define an angle equal to the second feature angle of the elements;

cutting the substrate a plurality of times along a first cutting direction parallel to the first angled side of the guiding polygon, each cut being spaced from an adjacent cut by a distance about equal to a bottom width of the elements;

cutting the substrate a plurality of times along a second cutting direction parallel to the second angled side of the guiding polygon, each cut being spaced from an adjacent cut by a distance about equal to the bottom width of the elements; and

cutting the substrate a plurality of times along a third cutting direction parallel to the third side of the guiding polygon, each cut being spaced from an adjacent cut by a length of the corresponding elements.

34. (New) The method of claim 33, wherein the lengths of the plurality of elements are identical.

35. (New) The method of claim 33, wherein the bottom widths of the plurality of elements are identical.

36. (New) The method of claim 33, wherein the plurality of detectable marks include a first mark, a second mark, a third mark, and a fourth mark which define a 4-sided guiding polygon.

37. (New) A dicing method for making a plurality of trapezoid- shaped elements from a substrate, wherein each element has first angled side and a second angled side, a top, a bottom, and a vertical divider line from the top to the bottom, the first angled side and the divider line defining a first feature angle of the trapezoid elements, the second angled side and the divider line defining a second feature angle of the trapezoid elements, the bottom and one of the first side or the second side defining a third feature angle of the trapezoid elements, each element having a length measured from the top to the bottom of the element; the method comprising:

defining a vertical reference on the substrate;

defining a first cutting direction which forms an angle with the vertical reference equal to the first feature angle of the trapezoid elements;

defining a second cutting direction which forms an angle with the vertical reference equal to the second feature angle of the trapezoid elements;

defining a third cutting direction which forms an angle with one of the first cutting direction or the second cutting direction equal to the third identical feature angle of the trapezoid elements;

cutting the substrate a plurality of times along the first cutting direction, each cut being spaced from an adjacent cut by a distance about equal to a bottom width of the corresponding elements;

cutting the substrate a plurality of times along the second cutting direction, each cut being spaced from an adjacent cut by a distance about equal to the bottom width of the corresponding elements; and

cutting the substrate a plurality of times along the third cutting direction, each cut being spaced from an adjacent cut by the length of the corresponding elements.

38. (New) The method of claim 37, further comprising:

forming a plurality of isolation trenches on the substrate, the resultant isolation trenches being parallel to each other and the vertical reference direction.